

Efficiency of Plasma in Treatment of Plantar Fasciitis

Zuidah Khan*

Department of Health Sciences, University Ubudiyah Indonesia, Aceh, Indonesia

DESCRIPTION

One of the most common causes of foot problems is plantar fasciitis. The peak age of occurrence is between the ages of 40 and 60. Repetitive microtrauma from heel striking causes traction periostitis and inhibits the normal repair process, resulting in chronic fascial inflammation. Excessive foot pronation, high arched feet, leg length discrepancy, and overweight individuals who spend long periods standing are all risk factors for developing plantar fasciitis. On the first step out of bed, the patient experiences pain which is relieved by gradually increasing activity and elicited by palpation of the medial plantar calcaneal region. Plantar fasciitis is a self-limiting condition, but full recovery can take 3 to 18 months or longer, affecting quality of life. There are numerous conservative, noninvasive treatment options, including Platelet Rich Plasma (PRP), a new and promising modality. PRP is a platelet-rich concentrate with platelet levels several times higher than the baseline. It stimulates fibroblast activity while modulating collagen synthesis, decreasing inflammation, and promoting tissue healing. PRP contains a high concentration of platelets as well as a complete set of clotting and growth factors. plantar fasciitis as a degenerative tissue condition rather than an inflammation of the plantar fascia at the calcaneus tuberosity. Collagen denaturation occurs in these lesions due to a small tear in the fascia that cannot heal. Because the normal fascia and surrounding tissue are replaced by angiofibroblastic hyperplastic tissue, the lesion sites lack inflammatory cell invasion, which is one of the histological features of chronic PF. PRP's cytokines and growth factors may play an important role in the treatment of PF. Transforming growth factor, vascular endothelial growth factor, and platelet-derived growth factor are all abundant in PRP. PRP also contains anti-inflammatory and pro-inflammatory cytokines and interleukins like interleukin 4, 8, 13, interferon, and tumor necrosis factor. The combination of these growth and anti-inflammatory components is required to start the healing process and reverse the degenerative process at the plantar fascia's base. Because of its hypovascularity and hypocellularity, the plantar fascia is inaccessible to high concentrations of platelets and growth factors; however, PRP injections allow delivery directly to the lesion site.

Treatment

Platelets contain dense and alpha granules; after platelet stimulation, alpha particles can release stored platelet-derived growth factors, and platelet-derived growth factors can promote angiogenesis and fiber repair. As a result, local PRP injection promotes plantar fascia repair. Platelet-rich plasma promotes the natural healing process by increasing platelet growth factors and hastening physiological healing. Platelet-rich plasma is platelet-rich plasma that can stimulate bone and muscle healing. PRP-induced tissue repair is mediated by various cytokines and growth factors. PRP is widely used in clinical settings to promote healing in cardiac muscular injuries, neural injuries, tendinitis, plastic surgery, and osteoarthritis. There is a significant increase in interest in using growth factor-containing plasma to treat various inflammatory conditions. As a result, PRP is used as an alternative treatment for plantar fasciitis to alleviate heel pain and restore function. In the treatment of patients with resistant PF, local injection modalities are frequently used in addition to conservative therapies. Since the 1950s, corticosteroid injections have been used to treat plantar heel pain. Corticosteroid injections have several advantages, including low cost, simplicity, and quick pain relief. Many people are concerned about the potential complications of this treatment modality, which may outweigh its benefits. PRP, a natural concentrate of autologous growth factors, is now being widely tested in various fields of medicine for its potential to assist in the regeneration of tissue with low healing potential.

Corresponding Author:

Zuidah Khan,

Department of Health Sciences, University Ubudiyah Indonesia, Aceh, Indonesia;

E-mail: zuidah@uui.ac.id

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